DIGITAL CONVERTIBLE RADIO SNR OPTIMIZATION

ABSTRACT OF THE DISCLOSURE

A digital convertible radio optimizes signal-to-noise ratios by substantially canceling undesired components of a plurality of input data streams present in sector signals in a cellular

5   network. The sector output power is then scaled to optimize the total power at the sector output ports. The input data streams are cross-correlated with each other and with digital representations of the sector signals to produce a plurality of cross-correlated signals. The plurality of cross-correlated signals is combined to identify the undesired cross-correlated signals. The portion of the undesired signal measurement representing the correlation between

10   the input signal streams are removed using the input signal cross correlation and system transfer function determination. A weighted vector adjustment module produces a plurality of complex weighted vector values that are mixed with the plurality of input data streams. Each weighted vector value is incrementally and sequentially adjusted based, in part, on measured undesired power levels. The real and imaginary components of the weighted vector value are updated with

15   an incremented or decremented value that produces the lowest measured undesired power level.